

105000-32831602

- (2) The rate of the reactive diluent (C-1) are 3% or more, more preferably 6% or more, further more preferably 10% or more, and 85% or less, more preferably 60% or less, further more preferably 50% or less.
- (3) The rate of the photopolymerization initiator (E) are 0.1% or more, more preferably 0.2% or more, and 15% or less, more preferably 5% or less.

Each rate of the components used in the second composition is as follows:

- (1) The sum of the components of (A) and (B) is 10% or more, preferably 20% or more, more preferably 30% or more, and 90% or less, more preferably 80% or less, further more preferably 70% or less relative to the total mass of the composition. The ratio of (A) to (B) is 1-99:99-1, preferably 5-70:95-30.

The rate of the component of (C) has 3 parts or more, preferably 5 parts or more, more preferably 8 parts or more, and 300 parts or less, more preferably 100 parts or less, further more preferably of 40 parts or less relative to 100 parts of the sum of the components of (A) and (B) (by mass, same hereinafter, unless otherwise stated).

The rate of the component of (E) are 0.5 parts or more, preferably 2 parts or more, more preferably 4 parts or more, and of 20 parts or less, more preferably 15 parts or less, further

more preferably 10 parts or less relative to 100 parts of the sum of the components of (A), (B), and (C).

The component of (F) is used in such a rate that the rate of the functional group of the component of (F) are 0.2-3.0 equivalent mol per carboxyl group existing in the components of (A) and (B).

Each rate of the components used in the third composition is as follows:

(1) The rate of the urethane oligomer (A) has 10% or more, more preferably 20% or more, further more preferably 30% or more, and 90% or less, more preferably 80% or less, further more preferably 70% or less relative to the total mass of the composition.

(2) The rate of the diluent (C) has 2% or more, more preferably 3% or more, further more preferably 5% or more, and 60% or less, more preferably 50% or less, further more preferably 15% or less relative to the total mass of the composition.

(3) The rate of the photopolymerization initiator (E) has 0.5 parts or more, preferably 2 parts or more, more preferably 4 parts or more, and 20 parts or less, more preferably 15 parts or less relative to 100 parts of the sum of the components of (A) and (C).

The component of (F) is used in such a rate that the quantity

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of the functional group of the component of (F) is 0.2-3.0 equivalent mol per carboxyl group existing in the component of (A).

Each rate of the components used in the forth composition is as follows:

- (1) The rate of the urethane oligomer (A) is 10% or more, more preferably 20% or more, and 90% or less, more preferably 80% or less, further more preferably 70% or less relative to the total mass of the composition.
- (2) The rate of the thermoplastic polymer (D) is 5% or more, more preferably 10% or more, further more preferably 20% or more, and 75% or less, more preferably 70% or less relative to the total mass of the composition.
- (3) The rate of the photopolymerization initiator (E) are 1 part or more, preferably 2 parts or more, more preferably 4 parts or more, and 20 parts or less, more preferably 15 parts or less relative to 100 parts of the sum of the components of (A) and (D).

If the resin composition is used for the etching resist for a printed circuit board, the component of (F) is preferably not incorporated. However, if the resin composition is used for the soldering resist for a printed circuit board, the component of (F) is incorporated in such a rate that the quantity of the functional group of the component of (F) is 0.2-3.0 equivalent